UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10 LABORATORY
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QUALITY ASSURANCE MEMORANDUM FOR ORGANIC CHEMICAL ANALYSES

Date: November 29, 2010

To: Kathy Parker, Project Manager
Office of Environmental Cleanup, Emergency Response Unit, US EPA Region 10

From: Steven Reimer, Chemist
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Subject: Quality Assurance Review for the Polynuclear Aromatic Hydrocarbon Analysis of a sample of opportunity from Bremerton Gasworks

Project Code: LAB-503D
Account Code: 11T10P302DC6C10JSLA00

The following is a quality assurance review of the data for Polynuclear Aromatic Hydrocarbon (PAH) analysis of the sample of opportunity from Bremerton Gasworks. The analysis was performed by the EPA Region 10 Laboratory staff using modified EPA SW846 methods 3510 and 8270.

This review was conducted for the following sample:

10402001

1. Data Qualifications

Comments below refer to the quality control specifications outlined in the Laboratory's current Quality Assurance Manual, Standard Operating Procedures (SOPs) and the Quality Assurance Project Plan (QAPP). No excursions were required from the method Standard Operating Procedure.

The quality control measures which did not meet Laboratory/QAPP criteria are annotated in the title of each affected subsection with *"Laboratory/QAPP Criteria Not Met"*.

For those tests for which the EPA Region 10 Laboratory has been accredited by the National Environmental Laboratory Accreditation Conference (NELAC), all requirements of the current NELAC Standard have been met.

2. Sample Transport and Receipt

Upon sample receipt, no conditions were noted that would affect data quality.

3. Sample Holding Times

The concentration of an analyte in a sample or extract of a sample may increase or decrease over time depending on the nature of the analyte. The sample was extracted and analyzed immediately upon receipt.

4. Sample Preparation

Samples were prepared according to the laboratory screening method. Only the oily water phase of the sample was prepared for analysis. A fast turnaround screening method was used.

5. Initial Calibration/Second Source Verification (SSV)

Initial calibration was performed on 08/12/10 for the reported target and surrogate compounds. Percent relative standard deviations (%RSDs) of the relative response factors (RRFs) met the criteria of ≤20% or correlation coefficients met the criteria of ≥0.99. The SSV met the criteria for frequency of analysis and the percent accuracies specified in the applicable laboratory SOP.

6. Continuing Calibration Verification (CCV)

The CCV met the criteria for frequency of analysis and relative retention time (RRT) windows for all target and surrogate compounds. The RRFs were ≥0.05 and the percent accuracies were 80-120% of the true value,.

7. LCS/LCSD

No QC samples were analyzed.

8. Blank Analysis

A high dilution of the sample itself (1:1000) substituted for a method blank. It did not contain detectable levels of target analytes.

9. Surrogate Spikes - *Laboratory/QAPP Criteria Not Met*

Surrogate recoveries are used to help in the evaluation of laboratory performance on individual samples. The surrogate recoveries were not determined due to the 100 fold dilution required.

10. Matrix Spike/Matrix Spike Duplicate Analysis (MS/MSD)

No MS/MSD was analyzed.

11. Internal Standard Performance

Internal standards performance criteria ensure that GC/MS sensitivity and response are stable during every analytical run. The retention time variations of all internal standards were within 30 seconds of the continuing calibration standard. The percent areas of all the internal standards were within the specified 50% to 200% of the continuing calibration standard for all reported results.

12. Compound Quantitation

The initial calibration functions were used for calculations. Reported quantitation limits were based on the

initial calibration standards and sample size used for the analysis. The method used was suitable for screening samples. To facilitate rapid turnaround it does not include normal quality control checks.

All manual integrations have been reviewed and found to comply with acceptable integration practices.

13. Identification

The RRTs for all detected target compounds were within acceptable limits of the initial or continuing calibration standards. Criteria were met for mass spectral ion matching or judged to be acceptable.

14. Data Qualifiers

All requirements for data qualifiers from the preceding sections were accumulated. Each sample data summary sheet and each compound was checked for positive or negative results. From this, the overall need for data qualifiers for each analysis was determined

Preliminary data was reported on October 6th. Changes are the addition of qualifiers and the correction of the units. The data was originally reported as mg/kg but was in fact mg/g. Data was generated using minimal QC and is being reported as estimated, "J".

The usefulness of qualified data should be treated according to the severity of the qualifier in light of the project's data quality objectives. Should questions arise regarding the data, contact Steven Reimer at the Region 10 Laboratory, phone number (360) 871 - 8718.